



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/015295 A1

(51) International Patent Classification⁷: G02F 1/1333,
1/1339, 1/1334

(21) International Application Number:
PCT/IB2004/051122

(22) International Filing Date: 5 July 2004 (05.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03102445.8 6 August 2003 (06.08.2003) EP

(71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) **Inventors/Applicants (for US only): PENTERMAN, Roel [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). KLINK, Stephen, I. [NL/NL]; c/o Prof.**

Holstlaan 6, NL-5656 AA Eindhoven (NL). **VOGELS, Joost, P., A.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **BROER, Dirk, J.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

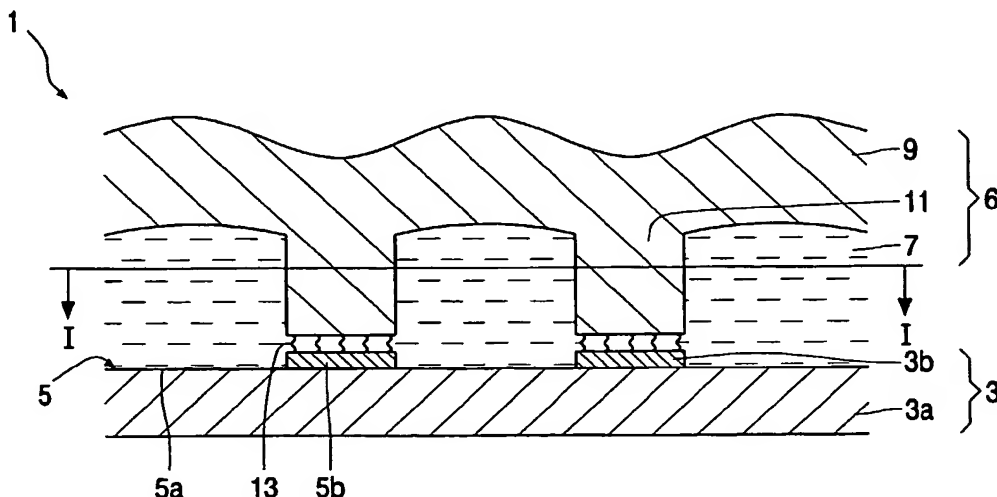
(74) Agent: TOL, Arie, J., W.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: STRATIFIED-PHASE-SEPARATED COMPOSITE COMPRISING A POLYMER AND A LIQUID,AND METHOD OF MANUFACTURING THE SAME



(S7) Abstract: A polymeric stratified-phase-separated composite (6) which is mechanically robust and simple to manufacture comprises a film of liquid (7), a layer of polymerized material (9) covering the thin film of liquid and supporting members (11) formed of polymerized material and extending from the layer of polymerized material through the thin film of liquid. The supporting members extend onto selected first regions (5b) of a substrate surface (5). The substrate surface has, laid out in accordance with a predetermined pattern, selected first (5b) and second (5a) regions. The first are functionalized for selective accumulation of the liquid. In one embodiment the first and second regions are regions of high and low affinity for polymerizable material respectively. In another, a difference in rate of polymerization is induced by using for example different concentrations of polymerization inhibitor in the first and second regions.



FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM,*

ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

- *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.